

## ABSTRACT

The invention provides a  $\geq 4$  kHz repetition rate argon fluoride excimer laser system for producing an UV wavelength 193nm output. The  $\geq 4$  kHz repetition rate argon fluoride excimer laser system includes an argon fluoride excimer laser chamber for producing a 193nm discharge at a pulse repetition rate  $\geq 4$  kHz. . The  $\geq 4$  kHz repetition rate argon fluoride excimer laser chamber includes magnesium fluoride crystal optic windows for outputting the 193nm discharge as a  $\geq 4$  kHz repetition rate excimer laser 193nm output with the magnesium fluoride crystal optic windows having a 255nm induced absorption less than 0.08 Abs/42mm when exposed to 5 million pulses of 193nm light at a fluence  $\geq 40\text{mJ/cm}^2/\text{pulse}$  and a 42mm crystal 120nm transmission of at least 30%.

14  
09  
28  
27  
55  
30  
06  
14  
02